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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,593	12/26/2001	Masamitsu Kuwabara	217400US3	7926

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EXAMINER

MCALEENAN, JAMES M

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 08/14/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,593

Applicant(s)

KUWABARA ET AL.

Examiner

James M McAleenan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/26/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). The term "division wall" in all of the claims is used by the claim to mean "shroud," while the accepted meaning is "wall." One skilled in the art would not use the term "division wall" in discussing the shroud. Further, the term in claim 7, recites "ship lap", denotes a woodworking term (wooden sheathing in which the boards are rabbeted so that the edges of each board lap over the edges of adjacent boards to make a flush joint, see Merriam-Webster's Collegiate Dictionary, 10th Ed., page 1081.) and not a term use by one skilled in the art in discussing the platform. It is possible the above terms ("division wall" and "ship lap") appear to be a literal translation into English from a foreign document.

Correction is require.

2. Claim 11 recites the limitation "the shroud" in line 7. There is insufficient antecedent basis for this limitation in the claim. The shroud has not been introduced into the claim. It appears the Applicant has become confused between the division ring being the shroud? Claim 11 is written poorly in terms of reciting the Applicant claimed invention and should be rewritten.

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Claim Objections

3. Claim 7 is objected to because of the following informalities: The term recited “such that” is indefinite and needs to be deleted, a suggestion for replacement is --wherein--. Appropriate correction is required.

NOTE: Applicant please notice that the language of the claim merely states a gas flow structure preventing gas from passing through the gap, at a connecting portion between the division wall sections. All this means, in terms of claim language is “anything” in the gap will meet the claim. The proposed claim language of “at a connection portion between the division wall sections can be anywhere along the gap! Note further, prior art cited by Applicant JP 61-164003, JP 60-001471 and EPO 0 490 522 A1 concerning the seal orientation, I.E. wherein the seal (45) extends to the top edge (43) of the gap (44) (see Figure 3 of Applicant’s drawings) presents a valid argument for the seal orientation. An easy solution to overcoming the prior art may be to recite the axial and radial positioning of the seal (45) in the (different) gap (s) (here, the first gap for the axial direction and second gap for the radial direction of the one seal)

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Allen (U.S. Patent Number 4,063,845). Allen discloses a division wall of a gas turbine including a plurality of division wall sections (18, 28) (see Figure 2 and Col. 2, lines 18 and 31 of Allen) connected in a direction of arrangement of blade (16, 17) (see Figure 2 and Col. 2, lines 17 and 28 of Allen) of the gas turbine. Allen teaches a wall surface (see Figures 2-4 of Allen) having a roughly circular cross section as a whole, wherein the division wall section are fixed to an outer end or an inner end of a blade (16, 27) (see Figure 2 and Col. 2, lines 17 and 28 of Allen) of the turbine. Allen discloses the division walls being arranged while interposing a predetermined space between the outer end of the blade (16, 27) (see Figure 2 and Col. 2, lines 17 and 28 of Allen) to form a passage wall for high temperature gas together with a blade surface of the blade (16, 27). Allen teaches a gas flow restricting structure (35) (see Figure 2 and Col. 2, line 41 of Allen) preventing the gas from passing through a gap (36) (see Figure 2 and Col. 2, line 42 of Allen). Allen discloses the structure (35) formed at a connecting portion between the division all sections in a flow direction of the gas from an opening on the upstream side (see Figure 1) of the gas in the gap (36). Regarding claim 2, Allen teaches the blade being a stationary blade (16) (see Figure 2 and Col. 2, line 17 of Allen) and the division wall being a shroud (28) (see Figure 2 and Col. 2, lines 45 of Allen). Regarding claim 3, Allen discloses the blade being a moving blade (27) (see Figure 2 and Col. 2, lines 17 and 28 of Allen) and the division wall being a platform (28) (see Figure 2

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and Col. 2, lines 45 of Allen). Regarding claim 4, Allen teaches the blade being a moving blade (27) (see Figure 2 and Col. 2, lines 17 and 28 of Allen) and the division wall being a division ring (see Figures 2-4) provided in a compartment while interposing a certain space between the tip end of the moving blade (27). Regarding claim 5, Allen discloses the gas flow restricting structure being a seal member (35) (see Figure 2 and Col. 2, line 41 of Allen) formed into a projecting shape filling the gap (36) so as to prevent the gas from leaking outside the passage wall. Regarding claim 6, Allen teaches the gas flow restricting structure (35) being a shield panel which closes the opening on the upstream side of the gas in the gap. (Note, Applicant doesn't say how much the seal closes the opening on the upstream side of the gas in the gap. Any seal closing a minimum of the opening on the upstream side of the gas in the gap meets the Applicant's claim language.)

5. Claims 1, 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by North (U.S. Patent Number 4,902,198). North discloses a division wall of a gas turbine including a plurality of division wall sections (12) (see Figure 4 and Col. 3, lines 65-67 of North) connected in a direction of arrangement of blade (28) (see Figure 1 and Col. 3, line 68 of North) of the gas turbine. North teaches a wall surface (see Figure 4 and Col. 3, lines 30-45 of North) having a roughly circular cross section as a whole, wherein the division wall section are fixed to an outer end or an inner end of a blade (28) of the turbine. North discloses the division walls being arranged while interposing a predetermined space between the outer end of the blade (28) to form a passage wall

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for high temperature gas together with a blade surface of the blade (28). North teaches a gas flow restricting structure (34) (see Figure 4 and Col. 4, line 38 of North) preventing the gas from passing through a gap (44) (see Figure 4 and Col. 4, line 10 of North). North discloses the structure (34) formed at a connecting portion between the division all sections in a flow direction of the gas from an opening on the upstream side (see Figure 4) of the gas in the gap (44).

Regarding claim 8, North discloses the division wall including a cooling air blowoff structure (36) (see Figure 4 and Col. 4, lines 40-45 of North) for blowing cooling air into the gap (44).

Regarding claim 9, North teaches the blowoff opening (36) for blowing the cooling air is formed in a side wall surface (see Figure 4 and Col. 4, lines 40-45 of North) of the gap (44). Regarding claim 10, North discloses the blowoff passage (36) for blowing cooling air being formed (see Figure 4 and Col. 4, lines 40-45 of North) in the sealing member (35) provided in the gap (44), so as to prevent the gas from leaking outside of the passage wall.

6. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by either Hallinger et al. (U.S. Patent Number 4,623,298) (see Figures 1-2 and Col. 1, lines 27-42), or Borufka et al. (U.S. Patent Number 5,154,581) (see Figure 3a and Col. 3, lines 35-44), or Jorgensen (U.S. Patent Number 4,878,811) (46, 48) (see Figure 5 and Col. 2, lines 63-65). The above presented prior art discloses a division wall of a gas turbine including a plurality of division wall sections connected in a direction of arrangement of blade of the gas turbine. The above presented prior art teaches a wall surface having a roughly circular cross section as a whole,

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wherein the division wall section are fixed to an outer end or an inner end of a blade of the turbine. The above presented prior art discloses the division walls being arranged while interposing a predetermined space between the outer end of the blade to form a passage wall for high temperature gas together with a blade surface of the blade. The above presented prior art teaches a gas flow restricting structure preventing the gas from passing through a gap. The above presented prior art discloses the structure formed at a connecting portion between the division all sections in a flow direction of the gas from an opening on the upstream side. Regarding claim 7, the above presented prior art discloses the gas flow restricting structure having a ship lap with respect to the flow direction being formed on the upstream side of the gas in the connecting portion of the division wall sections.

7. Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by either Steel et al. (U.S. Patent Number 4,317,646) or Riedmiller et al. (U.S. Patent Number 4,177,004). Steel et al. and Riedmiller et al. disclose a division wall of a gas turbine including a plurality of division wall sections (14a, 14b) (see Figure 2 and Col. 2, lines 21-26 of Steel et al.) (44, 23) (see Figure 1 and Col. 2, lines 58-60 and Col. 3, line 24 of Riedmiller et al.) connected in a direction of arrangement of blade (30) (see Figure 2 and Col. 2, line 46 of Steel et al.) (12) (see Figure 1 and Col. 2, lines 46-47 of Riedmiller et al.) of the gas turbine. Steel et al. and Riedmiller et al. teach a wall surface (see Figures 1-2 of Steel et al.) having a roughly circular cross section as a whole, wherein the division wall section are fixed to an outer end or an inner end of a blade ((30) of Steel

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et al.) ((12) of Riedmiller et al.) of the turbine. Steel et al. and Riedmiller et al. disclose the division walls being arranged while interposing a predetermined space between the outer end of the blade blade ((30) of Steel et al.) ((12) of Riedmiller et al.) to form a passage wall for high temperature gas together with a blade surface of the blade blade ((30) of Steel et al.) ((12) of Riedmiller et al.). Steel et al. and Riedmiller et al. teach a gas flow restricting structure (see Figure 2 of Steel et al.) preventing the gas from passing through a gap. Steel et al. and Riedmiller et al. disclose the structure (see Figure 2 of Steel et al.) formed at a connecting portion between the division all sections in a flow direction of the gas from an opening (26) (see Figure 2 and Col. 3, line 1 of Steel et al.) on the upstream side (see Figure 2 of Steel et al.) of the gas in the gap (near (26) of Steel et al.). Regarding claim 11, Steel et al. and Riedmiller et al. teach a division ring provided in a compartment while interposing a space between a tip end of the moving blade blade ((30) of Steel et al.) ((12) of Riedmiller et al.) of the turbine. Steel et al. and Riedmiller et al. disclose a stationary blade blade ((11) of Riedmiller et al.) provided on the back side of the moving blade ((30) of Steel et al.) ((12) of Riedmiller et al.), having a cooling passage (26 of Steel et al.) (48) (see Figure 4 and Col. 4, lines 60-68 of Riedmiller et al.) for cooling the division ring formed in the division ring (see Figure 2 and Col. 2, lines 66-68 and Col. 3, lines 1-10 of Steel et al.). Steel et al. and Riedmiller et al. disclose a front end portion of the shroud opposed to an opening of the back side of the cooling air passage (26) (see Figure 2 of Steel et al.) being formed at an angle (near (26) in Figure 2 of Steel et al.), wherein air is blown from the opening.

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PRIOR ART

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure and consists of 6 patents.

Predmore et al. (U.S. Patent Number 5,823,741), Anderson et al. (U.S. Patent Number 6,261,053), Hsia et al. (U.S. Patent Number 4,573,865), Liang (U.S. Patent Number 5,039,562), Karstensen (U.S. Patent Number 4,251,185) and Tassoni (U.S. Patent Number 2,991,045) are cited to show similar features as claimed by Applicant's invention.

Note, Applicant's cited foreign prior art has been considered for only the drawings since the foreign documents were not translated from a foreign language into the English language.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner James M. McAleenan whose telephone number is (703) 308-2827. The examiner can normally be reached on Monday thru Friday from 9:00 am to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (703) 308-1044. The fax number for this Group is (703) 305-3588.

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An inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

J. M. McAleenan 8/8/03

James M. McAleenan
Patent Examiner
Art Unit 3745

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